

Appl. No. : 10/048,142
Filed : July 16, 2002

REMARKS

This paper amends Claims 40, 74 and 75, and adds new Claims 85-93. Claims 41-73 and 76-84 are unchanged. Claims 40-93 are pending. Reconsideration and allowance of the claims is respectfully requested.

Discussion of Claim Rejection under 35 USC § 103(a)

Claims 40-61, 63 and 70-77 have been rejected under 35 U.S.C. § 103(a) as being obvious over Philips et al. (U.S. Patent No. 5,872,810) in view of Haartsen (U.S. Patent No. 6,081,697).

Claims 40, 74 and 75 recite a communication device for W-CDMA signal transmission and reception comprising, in pertinent part, a W-CDMA transmitter having "a digital circuit for phase unbalance precompensation in said W-CDMA transmitter". Regarding Claims 40, 74 and 75, the Office Action states that "Philips does not disclose a phase circuit for phase unbalance precompensation comprised in the CDMA transmitter". The Office Action continues by stating that the Haartsen reference at column 8, lines 58-65; column 2, lines 30-48; and Figure 7 shows this feature.

Applicant's Claim 40 (and similarly for Claims 74 and 75) recites, in pertinent part:

a digital circuit for phase unbalance precompensation in said W-CDMA transmitter, wherein said digital circuit substantially removes the I, Q phase difference that causes the phases of I and Q signals to not have a 90 degree separation.

In contrast to Haartsen, Applicant respectfully submits that a phase unbalance precompensation is carried out to bring the I and Q branches into a 90 degrees phase difference as, for example, described at page 20 and Figure 8 of the PCT publication WO 01/08314. This comprises: I, Q in, and precompensated I, Q coming out. Deviations or phase unbalances occur from the ideal 90 degree phase difference, such as where there are differences in the group delay between the I and Q circuit paths, for example.

To the contrary in the Haartsen reference, the multiplications lead to the realization of a real Intermediate Frequency (IF) signal, by manipulating the I and Q branches with fixed 90 degrees phase shifts and carrier multiplications (by zero degrees or 90 degrees). This is not related at all to

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the precompensation of phase unbalance. Therefore, the Philips reference combined with the Haartsen reference cannot make obvious independent Claims 40, 74 and 75.

Dependent Claims

Although Applicant has not addressed the issues of the dependent claims, Applicant respectfully submits that Applicant does not necessarily agree with the characterization and assessments of the dependent claims made by the Examiner, and Applicant believes that each claim is patentable on its own merits. Claims 41-73 and 76-77 are dependent either directly or indirectly on the above-discussed independent claims. Applicant respectfully submits that pursuant to 35 U.S.C. § 112, ¶4, the dependent claims incorporate by reference all the limitations of the claim to which they refer and include their own patentable features, and are therefore in condition for allowance. Therefore, Applicant respectfully requests the withdrawal of all claim rejections and prompt allowance of the claims.

New Claims

Applicant has added new Claims 85-93. Dependent Claims 87, 90 and 93 are based on Claims 40, 74 and 75. Dependent Claims 85-86, 88-89 and 91-92 are supported by at least Figure 8 and page 20 of the corresponding PCT publication WO 01/08314. Neither the Philips reference nor the Haartsen reference discloses a software configurable compensation angle and the arithmetic calculations to acquire the change of the I, Q angle by the compensation angle so as to perform phase unbalance precompensation in the W-CDMA transmitter.

Allowable Subject Matter

The Office Action mailed November 8, 2006 indicated that Claims 78-84 are allowed.

Conclusion

In view of the foregoing remarks, Applicant respectfully submits that the claims of the above-identified application are in condition for allowance. However, if the Examiner finds any impediment to allowing all claims that can be resolved by telephone, the Examiner is respectfully requested to call the undersigned.

Appl. No. : 10/048,142
Filed : July 16, 2002

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

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By: *Raimond J. Salenieks*
Raimond J. Salenieks
Registration No. 37,924
Agent of Record
Customer No. 20,995
(619) 235-8550

3387169
020507